1-1-2012

Volunteer lake assessment program individual lake reports: Dorrs Pond, Manchester, NH

New Hampshire Department of Environmental Services

Volunteer Lake Assessment Program Individual Lake Reports

DORRS POND, MANCHESTER, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,473	**Max. Depth (m):**	2.9	**Flushing Rate (yr^{-1}):**	31.2
Surface Area (Ac.):	18	**Mean Depth (m):**	1.3	**P Retention Coef:**	0.39
Shore Length (m):	1,600	**Volume (m^3):**	92,000	**Elevation (ft):**	270

TROPHIC CLASSIFICATION

Year	Trophic class
1981	EUTROPHIC
1997	MESOTROPHIC

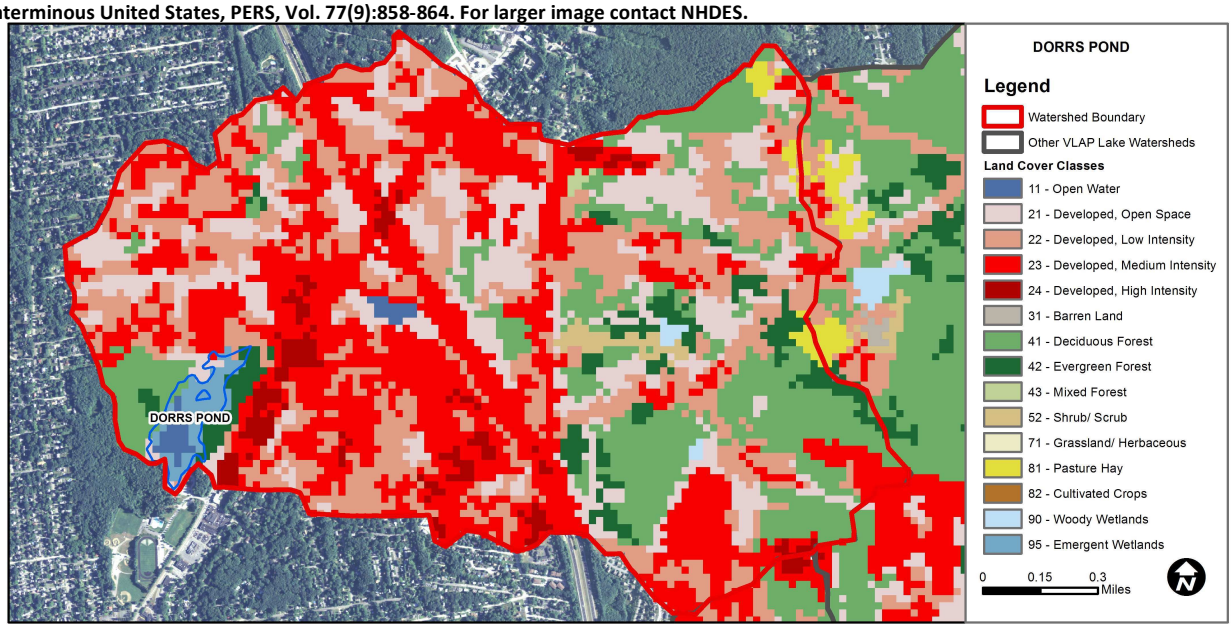
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Bad	>/=5 samples and median is >2x threshold.
	pH	Good	At least 10 samples with 1 sample but < 10% of samples exceeding criteria.
	D.O. (mg/L)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Bad	>/=5 samples and median is >2x threshold.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	0.65	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	16.8	Deciduous Forest	16.18	Pasture Hay	0.63
Developed-Low Intensity	25.3	Evergreen Forest	4.15	Cultivated Crops	0
Developed-Medium Intensity	30.9	Mixed Forest	0.13	Woody Wetlands	0.26
Developed-High Intensity	2.94	Shrub-Scrub	0.76	Emergent Wetlands	1.23

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
DORRS POND, MANCHESTER, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were average in 2012. Historical data analysis indicates a significantly improving (decreasing) chlorophyll level since monitoring began. We hope to see this continue!
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride were elevated and indicative of the urbanized watershed. Chloride levels in Lessard Inlet approaching state standard for chronic chloride toxicity.
- **TOTAL PHOSPHORUS:** Deep spot and tributary phosphorus levels were elevated and indicative of the urbanized watershed. Historical trend analysis indicates a relatively stable epilimnetic (upper water layer) phosphorus level.
- **TRANSPARENCY:** Transparency has remained relatively stable since monitoring began.
- **TURBIDITY:** Turbidity levels were elevated at all stations except E II Inlet. Sediment and iron bacteria were noted in samples in July and August which contributed to elevated turbidities.
- **PH:** pH levels were sufficient to support aquatic life.
- **RECOMMENDED ACTIONS:** Dorrs Pond is an urban pond greatly impacted by its watershed. While it is recommended to address conductivity, chloride and phosphorus loading, we recognize the limitations in improving water quality. A positive sign is the decreasing chlorophyll levels and stabilizing phosphorus levels since monitoring began.

Dissolved Oxygen & Temperature Profile

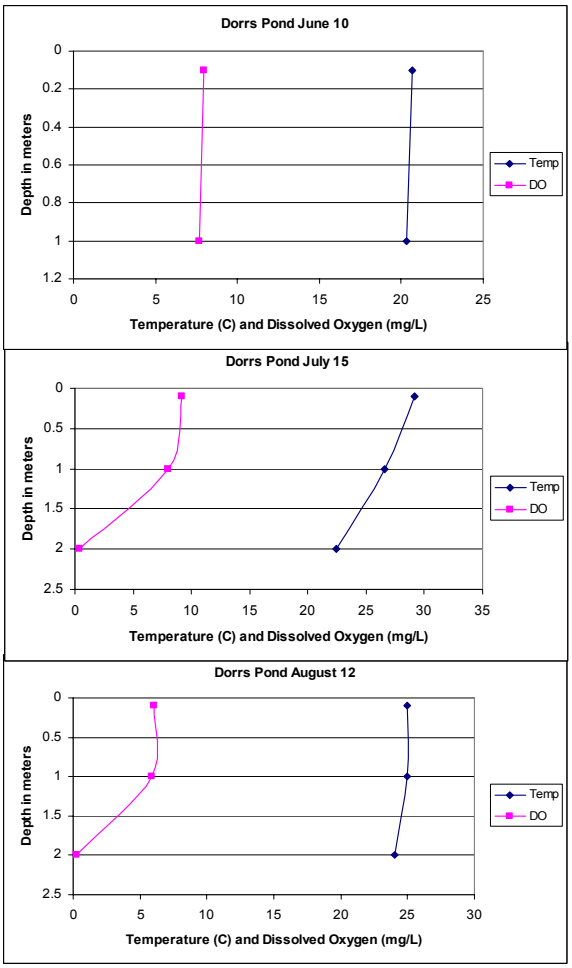


Table 1. 2012 Average Water Quality Data for DORRS POND

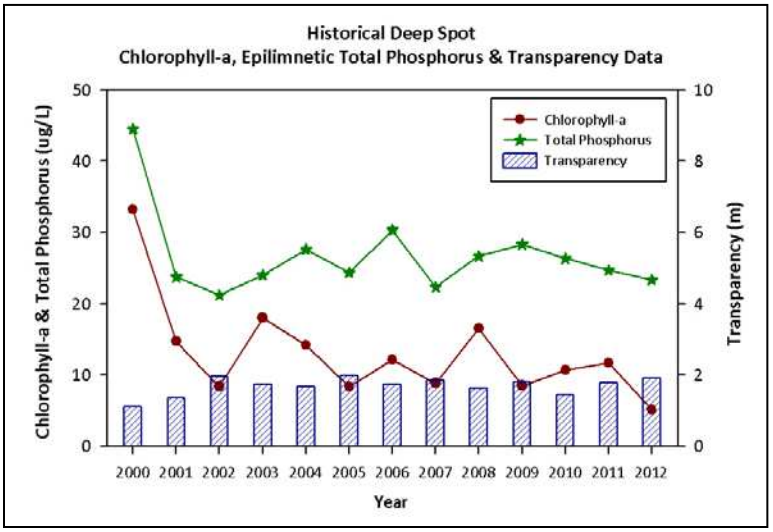
Station Name	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m		ntu	
						NVS	VS		
E II Inlet			149.3	581.0	29			1	7.22
Deep Epilimnion	30	5.1	146.7	564.0	23	1.92	1.88	3.32	7.28
Juniper St Inlet			87.3	399.7	56			35.1	6.63
Lessard Inlet			231.7	840.0	35			9.7	6.98
Outlet				570.0	24			3.31	7.33

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Improving	Significantly decreasing chlorophyll levels.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	Stable	Data not significantly increasing or decreasing.



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